

A SMALL COLLECTION OF DECAPOD CRUSTACEA  
FROM MOÇAMBIQUE

By

BRIAN KENSLEY  
South African Museum, Cape Town

(With 14 figures)

[MS. received 5 February 1970]

CONTENTS

	PAGE
Introduction . . .	103
Species list . . .	103
Systematic discussion . . .	105
General discussion . . .	121
Summary . . .	121
Acknowledgements . . .	121
References . . .	121

INTRODUCTION

During July 1968 a team of biologists from the University of Cape Town, led by Professor J. H. Day, visited Inhambane, on the coast of Moçambique. The purpose of the visit was to do a second survey of the Morrumbene estuary, as part of the series of estuarine surveys carried out around southern Africa. At the same time, an opportunity was taken of collecting plant and animal specimens at Jangamo (24.06S., 35.21E.), 32 km south of Inhambane. The collecting was done along the shore and nearby reef, supplemented by diving. The decapod crustacean material was submitted to the South African Museum for identification. A list of the species, together with the catalogue numbers of the Zoology Department, University of Cape Town, is given. In many cases, duplicate material has been kept in the collection of the South African Museum, where the type material is housed.

SPECIES LIST

Species	Male	Female	Juv.	Cat. No.
<b>BRACHYURA</b>				
Family <b>Majidae</b>				
<i>Dehaanius quadridentatus</i> (Krauss) .. ..	2	2	—	14T
<i>Dehaanius scutellatus</i> (Mcleay) .. ..	1	2 ovig	—	14S
<i>Hyastenus spinosus</i> H. Milne Edwards .. ..	4	6 + 1 ovig	—	14U
<i>Menaethiops delagoae</i> Barnard .. ..	2	2	—	15V
<i>Menaethiops fascicularis</i> (Krauss) .. ..	4	1	—	15U
<i>Menaethiops natalensis</i> Barnard .. ..	—	1 + 1 ovig	—	14W
<i>Menaethiops monocerus</i> (Latreille) .. ..	—	1 ovig	—	14Y
<i>Schizophrys aspera</i> (H. Milne Edwards) .. ..	1	—	—	14X

<i>Species</i>	<i>Male</i>	<i>Female</i>	<i>Juv.</i>	<i>Cat. No.</i>
<b>Family Hymenosomatidae</b>				
<i>Elamena mathei</i> (Desmarest) .. .. .	3	3 + 3 ovig	—	15B
<b>Family Portunidae</b>				
<i>Charybdis annulata</i> (Fabricius) .. .. .	2	—	—	14B
<i>Charybdis orientalis</i> Dana .. .. .	1	—	—	14D
<i>Thalamita admete</i> (Herbst) .. .. .	1	1	—	14F
<i>Thalamita</i> sp. .. .. .	—	1 + 1 ovig	—	14G
<i>Thalamita woodmasoni</i> Alcock .. .. .	—	1	—	14H
<b>Family Grapsidae</b>				
<i>Grapsus tourmanoiri</i> Crosnier .. .. .	5	1	—	14J
<i>Pachygrapsus minutus</i> (A. Milne Edwards) .. .. .	2	2 + 2 ovig	—	16C
<i>Percnon planissimum</i> (Herbst) .. .. .	5	4 ovig	—	14A
<i>Planes cyaneus</i> Dana .. .. .	—	—	1	16F
<i>Varuna litterata</i> (Fabricius) .. .. .	1	—	—	16D
<b>Family Ocypodidae</b>				
<i>Ocypode ceratophthalmus</i> (Pallas) .. .. .	1	2	—	14X
<b>Family Xanthidae</b>				
<i>Actaea parvula</i> (Krauss) .. .. .	1	1	—	15G
<i>Actaea polyacantha</i> (Heller) .. .. .	—	1	—	15S
<i>Actaea rueppellii</i> (Krauss) .. .. .	—	1 ovig	—	15J
<i>Atergatopsis signata</i> (Adams & White) .. .. .	1	—	—	15C
<i>Carpilodes cinctimanus</i> (White) .. .. .	—	1	—	15D
<i>Carpilodes monticulosus</i> A. Milne Edwards .. .. .	1	—	—	15R
<i>Chlorodiella laevissima</i> (Dana) .. .. .	2	1	—	15T
<i>Chlorodopsis areolata</i> (H. Milne Edwards) .. .. .	2	2 + 2 ovig	—	15K
<i>Lybia plumosa</i> Barnard .. .. .	3	3	—	15M
<i>Lybia tessellata</i> (Latreille) .. .. .	—	1 ovig	—	16B
<i>Macromedaeus quinquedentatus</i> (Krauss) .. .. .	—	1	—	15W
<i>Pilumnus longicornis</i> Hilgendorf .. .. .	—	1 ovig	—	15H
<i>Trapezia cymodoce</i> (Herbst) .. .. .	5	2 ovig	—	15A
<i>Trapezia guttata</i> Rüppell .. .. .	1	3	—	16E
<i>Zosimus aeneus</i> (Linnaeus) .. .. .	1	—	—	15N
<i>Zozymodes cavipes</i> (Dana) .. .. .	1	—	—	15L
<i>Zozymodes xanthoides</i> (Krauss) .. .. .	1	3	—	15F
<b>Family Dromiidae</b>				
<i>Cryptodromia bullifera</i> Alcock .. .. .	1	—	—	14Q
<i>Cryptodromia canaliculata</i> Stimpson .. .. .	6	2 ovig	—	14P
<i>Petalomera laevis</i> n. sp. .. .. .	1	2 ovig	—	S.A.M.A. 12824-5 14N
<b>Family Calappidae</b>				
<i>Matuta banksi</i> Leach .. .. .	2	—	—	14E
<b>Family Leucosiidae</b>				
<i>Philyra scabriuscula</i> (Fabricius) .. .. .	1	—	—	16A
<b>ANOMURA</b>				
<b>Family Hippidae</b>				
<i>Emerita austroafricana</i> Schmitt .. .. .	1	1 ovig	—	14L
<i>Hippa adactyla</i> Fabricius .. .. .	2	—	—	14M
<b>Family Paguridae</b>				
<i>Calcinus gaimardii</i> (H. Milne Edwards) .. .. .	2	4	—	13T
<i>Calcinus laevimanus</i> (Randall) .. .. .	1	—	—	13V
<i>Clibanarius virescens</i> (Krauss) .. .. .	5	—	3	13U
<b>Family Porcellanidae</b>				
<i>Pachycheles natalensis</i> (Krauss) .. .. .	6	3 ovig	—	13N
	5	1 + 3 ovig	1	13R

Species	Male	Female	Juv.	Cat. No.
<i>Petrolisthes alobatus</i> Laurie .. .. .	1	1 ovig	—	13J
<i>Petrolisthes coccineus</i> (Owen) .. .. .	1	—	—	13K
<i>Petrolisthes lamarckii</i> (Leach) .. .. .	2	3 + 1 ovig	2	13L
<i>Petrolisthes militaris</i> (Heller) .. .. .	2	2 + 1 ovig	—	14Z
<i>Petrolisthes virgatus</i> Barnard .. .. .	—	1 ovig	—	13M
<i>Porcellana dehaanii</i> Krauss .. .. .	10	2 ovig	26	13P

**PALINURA**

Family **Palinuridae**

<i>Panulirus penicillatus</i> (Olivier) .. .. .	1	—	—	15B
---	---	---	---	-----

**NATANTIA**

Family **Palaemonidae**

<i>Palaemon (Palaemon) pacificus</i> Stimpson .. .. .	1	—	1	13G
---	---	---	---	-----

Family **Hippolytidae**

<i>Alope orientalis</i> (De Man) .. .. .	6	2 + 7 ovig	5	13D
<i>Hippolysmata kukenthalii</i> (De Man) .. .. .	1	1	—	13E
<i>Hippolyte ventricosa</i> H. Milne Edwards .. .. .	—	1 ovig	—	13Y
<i>Saron marmoratus</i> (Olivier) .. .. .	3	—	—	13S
<i>Thor amboinensis</i> (De Man) .. .. .	1	—	—	13F

Family **Alpheidae**

<i>Alpheus lottini</i> Guérin .. .. .	1	2 ovig	—	13A
<i>Alpheus luciae</i> Barnard .. .. .	1	1 ovig	—	13C
<i>Alpheus paragracilis</i> Coutière .. .. .	—	1 ovig	—	13H
<i>Athanas minikoensis</i> Coutière .. .. .	1	—	—	13Z

SYSTEMATIC DISCUSSION

**BRACHYURA**

Family **Grapsidae**

*Pachygrapsus minutus* A. Milne Edwards

Figs 1a-d

*Pachygrapsus minutus* A. Milne Edwards, Tesch, 1918: 77. Gordon, 1934: 7. Sakai, 1939: 656; 1965: 194. Crosnier, 1965: 26.

*Description*: Carapace wider than long, lateral margins strongly convergent posteriorly, no spine behind outer orbital tooth. Carapace dorsally striate throughout, striae continuous across carapace, not setose. Chelae smooth, carpus with strong spine on inner margin, merus with inner margin bearing three flattened spines. Pereiopods with scattered stiff hairs, meri with two spines on postero-distal edge. Last pair of pereiopods with additional pair of short blunt spines on posterior margin, at about proximal third of merus. Pleopod one of male with numerous setae, concealing curved terminal apically rounded lobe.

*Previous records*: Most of the Indo-Pacific region.

*Material*:

	Carapace length	Carapace breadth
Male .. .. .	5.4 mm	7.7 mm
Male .. .. .	4.9 mm	6.6 mm
Male .. .. .	4.3 mm	6.0 mm
Female .. .. .	4.8 mm	6.1 mm
Ovigerous female	5.5 mm	8.0 mm

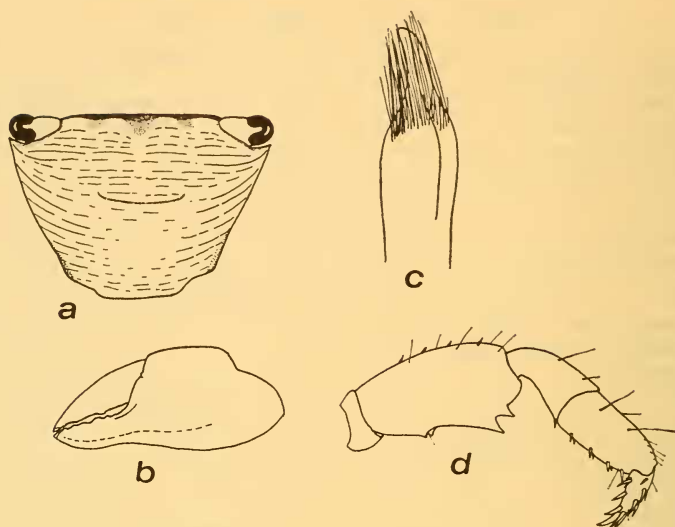


FIG. 1. *Pachygrapsus minutus* A. Milne Edwards  
 a. Carapace in dorsal view; b. External view of left chela; c. Apex of pleopod one, male; d. Fifth pereiopod.

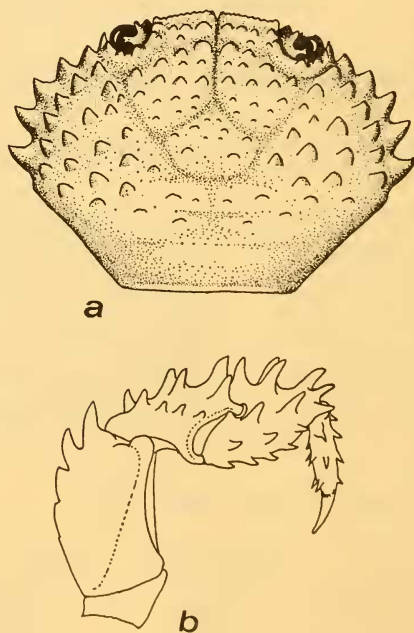


FIG. 2. *Actaea polyacantha* (Heller)  
 a. Carapace in dorsal view; b. Fourth pereiopod.

*Remarks*: Although this species has been widely recorded from the Indo-Pacific region, including the East African coast, it has hitherto not been taken so far south.

Family **XANTHIDAE**

*Actaea polyacantha* (Heller)

Figs 2a-b

*Actaea polyacantha* (Heller), Rathbun, 1911: 222. Odhner, 1925: 57. Sakai, 1939: 486; 1965: 146.

*Description*: Carapace broader than long, areoles other than 2M and 3M not well defined, covered with flattened tubercles, those of antero-lateral regions being better defined than posterior ones. Antero-lateral margin with six conical tubercles (including external orbital angle). Supra-orbital margin and eyestalks also bearing tubercles. Chela with conical pointed tubercles on palm, upper margin of hand, and base of movable finger. Carpus armed with numerous tubercles. Finger-tips slightly spooned. Walking legs armed with strong conical acute tubercles, those of upper margins being strongest.

*Previous records*: Indo-Pacific region from Japan to Zanzibar.

*Material*: One male, carapace length 5.9 mm, carapace breadth 8.1 mm.

*Chlorodiella laevis* (Dana)

Figs 3a-d

*Chlorodiella laevis* (Dana), Sakai, 1939: 508; 1965: 151. Forest & Guinot, 1961: 95.

*Description*: Carapace wider than long, smooth, regions not demarked. Antero-lateral border with four teeth, inner two being short and blunt, outer two spinose. Chela stout, smooth, fingers darkened, tips spooned. Walking legs with dactyls equal in length to propodus, apex sharply downcurved, bearing four or five strong spines. Dorsal surface of carpi and meri spinose. Pleopod one of male slightly curved, apex bearing several backwardly directed stout setae, and short spines.

*Previous records*: Japan, Tahiti, Gilbert and Marianne Islands, Queensland, Ceylon, Andamans, Mauritius.

*Material*:

			<i>Carapace length</i>	<i>Carapace breadth</i>
Male	..	..	3.5 mm	5.0 mm (chelae missing)
Male	..	..	3.5 mm	5.2 mm (left chela missing)
Female	..	..	4.7 mm	7.6 mm (chelae missing)

Family **Dromiidae**

*Cryptodromia bullifera* Alcock

Figs 4a-c

*Cryptodromia bullifera* Alcock, 1899: 143; 1901: 51. Borradaile, 1903a: 577. Ihle, 1913: 40. Sakai, 1936: 23.

*Description*: Carapace and appendages covered with pile of short hairs. Frontal region of three acute teeth, lateral teeth slightly divergent, and at

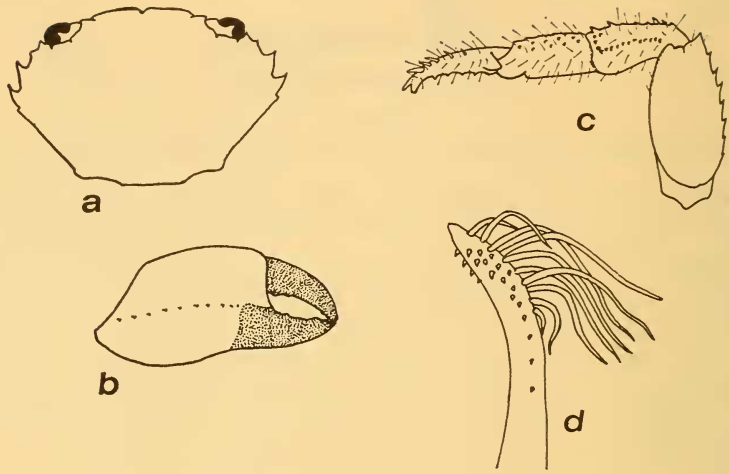


FIG. 3. *Chlorodiella laevissima* (Dana)  
 a. Carapace in dorsal view; b. Right chela; c. Fourth pereopod; d. Apex of pleopod one, male.

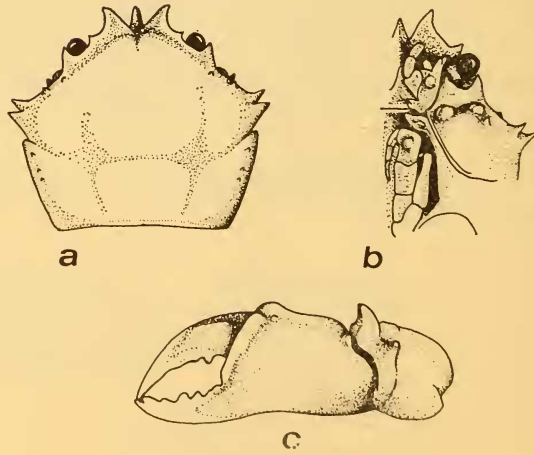


FIG. 4. *Cryptodromia bullifera* Alcock  
 a. Carapace in dorsal view, setae omitted; b. Anterior region in ventral view; c. Left chela.

higher level than median tooth. Small acute supra-orbital spine, extra-orbital tooth acute. Lateral margin bearing three teeth, anterior two being prominent, acute. Two tiny tubercles between extra-orbital tooth and first lateral tooth, slightly dorsal to antero-lateral margin. Three tiny tubercles in line dorsal and parallel to postero-lateral margin. Acute sub-orbital and hepatic spine present. Rounded pearl-like knob below sub-orbital spine, dorsal to hepatic spine, on merus of maxilliped three, and on second antennal peduncle segment. Chelae equal, lacking epipods, wide gap between fingers, six or seven teeth on cutting edges. Upper distal portion of hand nodose. Carpus with two prominent tubercles on outer distal margin. Fifth pereopods longer than fourth.

*Previous records:* Maldive and Laccadive Islands, Andamans, Ceylon.

*Material:*

	<i>Carapace length</i>	<i>Carapace breadth</i>	<i>Chela length</i>
Male .. ..	7.4 mm	8.9 mm	5.2 mm

*Remarks:* Except for the presence of the tiny dorsal tubercles on the carapace, the specimen agrees exactly with Alcock's description of the species. This is the southernmost record of this typically Indian Ocean species.

*Cryptodromia canaliculata* Stimpson

Figs 5a-c

*Cryptodromia canaliculata* Stimpson, Alcock, 1899: 142; 1901: 50. Ihle, 1913: 41. Sakai, 1936: 24.

*Cryptodromia hirsuta* Borradaile, 1903a: 577.

*Dromia* (*Cryptodromia*) *pentagonalis* Hilgendorf, 1878: 814.

*Dromia* (*Cryptodromia*) *tomentosa* Heller, Hilgendorf, 1878: 813.

*Description:* Carapace smooth, wider than long, covered with short tomentum of plumose hairs, regions moderately well indicated. Gastric region evenly convex. Front tridentate, median tooth longer and sharper than, and set at lower level to lateral teeth. Small supra-orbital spine and triangular post-orbital tooth separated by wide gap from large antero-lateral tooth. Posterior to latter, two smaller spines, anterior one blunter than posterior one. One large blunt subhepatic spine, one smaller supra-sutural blunt spine, broad infra-orbital lobe. Chelae lacking epipods, completely covered by short hairs, except for distal portion of fingers. Fixed finger with about eight or nine sharp teeth on cutting edge. Dactyl similarly armed. Hand nodulose at base of dactyl. External surface of carpus strongly nodulose. Merus triangular in cross-section. Distal ends of propodi and carpi of walking legs and proximal ends of dactyls nodulose. Latter with strong curved claw, and five smaller spines proximally. Fifth pereopod longer than fourth.

*Previous records:* Japan, India, Maldive and Laccadive Islands, Mauritius, Red Sea, Ibo (Moçambique).

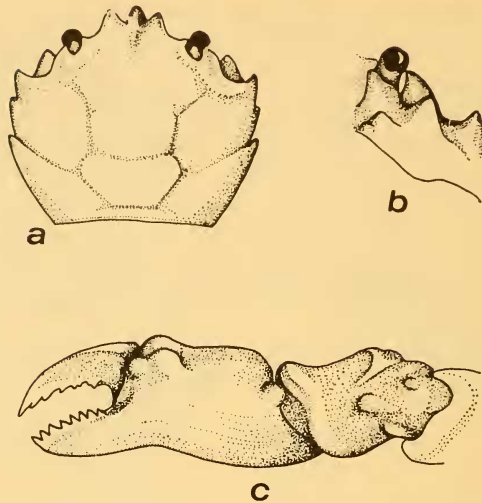


FIG. 5. *Cryptodromia canaliculata* Stimpson  
 a. Carapace in dorsal view, setae omitted; b. Anterior region in ventral view; c. Left chela.

*Material:*

			Carapace length	Carapace breadth	Chela length
Male	..	..	10.5 mm	12.0 mm	8.0 mm
Male	..	..	10.0 mm	11.3 mm	6.5 mm
Male	..	..	9.0 mm	9.9 mm	—
Male	..	..	8.3 mm	10.0 mm	—
Male	..	..	8.0 mm	9.0 mm	5.1 mm
Male	..	..	7.4 mm	8.1 mm	4.0 mm
Ovigerous female			9.8 mm	10.9 mm	5.2 mm
Ovigerous female			8.9 mm	9.2 mm	5.0 mm

*Remarks:* Barnard (1950: 328) suggests that *Cryptodromia oktahedros* Stebbing might be synonymous with *C. tomentosa* Heller and *C. hirsuta* Borradaile. The latter two species, however, are synonymous with *C. canaliculata* Stimpson, which more closely resembles *C. pentagonalis*. In fact, if as Ihle (1913) states, *C. canaliculata* is fairly variable, then judging from Hilgendorf's figures (1878, Tafel II, figs 1-4) there is no difference between this species and *C. pentagonalis*.

Genus PETALOMERA

Borradaile, 1903*b*: 300. Ihle, 1913: 48. Rathbun, 1923: 153. Sakai, 1936: 28; 1965: 9. Barnard, 1950: 312.



*Petalomera laevis* n. sp.

Figs 6a-h

*Description*: Carapace smooth, with scattering of very fine hairs, regions not defined. Front with acute but not very strong or prominent rostral point. Flanking lobes low, rounded. Eyes just visible dorsally, supra-orbital ridge very slightly emarginate. Antero-lateral margins hardly interrupted by five small blunt bumps, most posterior of which the largest. Posterior margin straight.

Chelipeds equal, bearing epipods, except for fingers almost covered with very short pile of fine hairs. Tip of dactyl ending in tooth, fitting between two terminal teeth of fixed finger (this character more noticeable in male). Cutting edges with about seven rounded teeth. Inner dorsal surface of palm bearing six small granules. Carpus with three rounded nodules, inner surface flattened, defined by dorsal ridge. Merus with inner surface broad, flattened, defined dorsally by a sharp ridge, triangular in cross-section, ventral edge bearing a row of about eight tiny granules.

Dactyl of second pereopod with two small spines behind the terminal claw, rounded node at articulation with propodus. Latter with two dorso-distal nodes. Inner surface of carpus flattened, dorsally defined by ridge, two rounded nodes in region of articulation with propodus. Merus with flattened inner surface, triangular in cross-section, dorsal ridge sharp. Third pereopod similar to second. Fourth pereopod shorter than fifth. Sternal grooves of female ending on small knob near base of second pereopods. Terminal abdominal segment of male rounded.

<i>Material</i> :	<i>Carapace</i> <i>length</i>	<i>Carapace</i> <i>breadth</i>	<i>Chela</i> <i>length</i>
Holotype, ovigerous female (S.A.M.A12824)	14.2 mm	16.5 mm	8.0 mm
Paratype, ovigerous female (14N) .. ..	11.8 mm	13.0 mm	6.3 mm
Paratype, male (S.A.M.A12825) .. ..	13.0 mm	14.6 mm	8.3 mm

*Remarks*: Borradaile (1903: 300) defined the genus *Petalomera* as 'Dromiidae with an epipodite on the cheliped, the walking legs bearing sharp ridges, the carapace varying in the relation of its length to its breadth, but usually broader than long, the regions clearly or indistinctly marked, the efferent branchial channels well made, the sternal grooves of the female ending apart behind the cheliped segment, the fifth leg shorter than the third and without a thorn on the outer side of its last joint'. *Petalomera laevis* differs from none of the above criteria.

The most striking character of this species is the smooth finely pubescent carapace, with its barely noticeable lateral knobs. This immediately separates it from *P. wilsoni* the only other species of this genus known from this region. *P. wilsoni* characteristically has a dense almost shaggy pubescence, which 'accentuates instead of obliterating the underlying regions' (Barnard, 1950: 313). A smooth carapace is characteristic of several species of *Petalomera*, viz. *fukuii*,

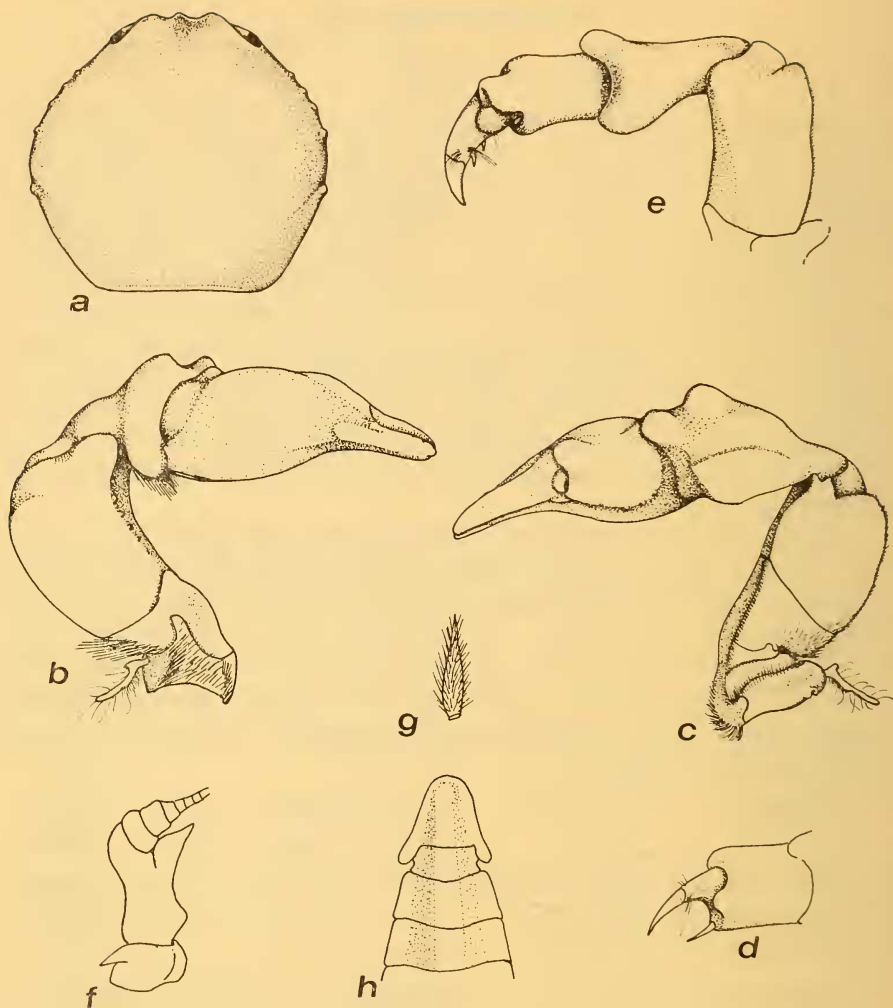


FIG. 6. *Petalomera laevis* n. sp.

a. Carapace in dorsal view; b. Right chela in ventral view; c. Right chela in dorsal view; d. Dactyl and propodus of fourth pereiopod; e. Second pereiopod; f. Left antenna; g. Carapace seta enlarged; h. Abdomen of male.

*atypica*, *pulchra*, *lateralis*, *lamellata* and *depressa*. The present species differs from *P. fukuii* Sakai and *P. depressa* (Baker) in having the pereiopods less granular; from *P. lateralis* (Gray), *P. lamellata* (Ortmann) and *P. atypica* Sakai, which have well-developed antero-lateral carapace spines; from *P. pulchra* Miers which has the carapace regions well defined. There is a superficial resemblance between this species and *Cryptodromia monodous* Stebbing, but differences in the frontal region, the chelae, and the carapace soon separate them.

## ANOMURA

Family **Porcellanidae***Petrolisthes alobatus* Laurie

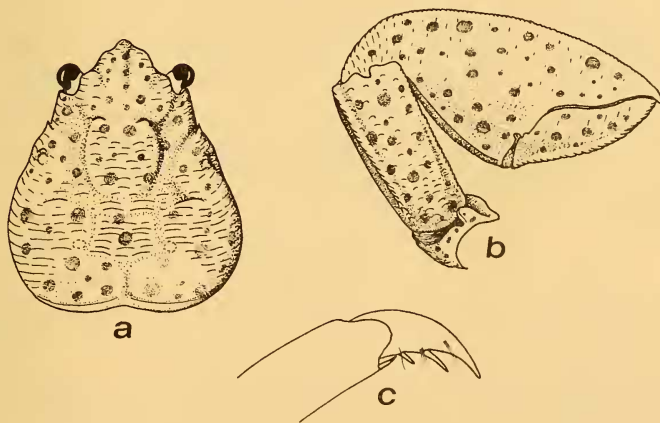
Figs 7a-c

*Petrolisthes alobatus* Laurie, 1925: 144. Haig, 1965: 46.

*Description:* Carapace longer than wide, with numerous transverse rugae. Cervical groove broad. Gastric region convex, bearing pair of transverse ridges anteriorly. Supra-orbital margin deeply excavate. Supra-orbital lobe without spine. No post-orbital spine but well-developed lobe. Strong epibranchial spine present, branchial region with a blunt raised tubercle in anterior part. Posterior margin with slight raised rim, medially concave. Maxilliped three with ischium very broad, rugose, merus with expanded rugose lobe on inner margin; dactyl, propodus, carpus with very elongate branched setae. Anterior margin of carpus of pereiopod one finely denticulate, almost smooth. Posterior margin irregular due to rugae. Ventral surface of hand with keel formed by rugae, upper edge of dactyl similar. No gap between fingers. Dactyls of pereiopods two to five with small spine proximal to the subterminal one. Propodi cylindrical, smooth, bearing strong articulated spine at postero-distal angle. Carpus and merus fairly rugose.

*Previous records:* Cargados Carajos.*Material:*

	<i>Carapace length</i>	<i>Carapace breadth</i>
Male .. .. .	10.0 mm	8.4 mm
Ovigerous female ..	12.4 mm	11.0 mm

FIG. 7. *Petrolisthes alobatus* Laurie

a. Carapace in dorsal view; b. Left cheliped; c. Dactyl of second pereiopod.

*Remarks:* The specimens were taken from the actinopharynx of a large sea anemone, found in about 0.9 m of water. Commensalism with sea anemones has not previously been reported for *P. alobatus*, but is known for *P. maculatus* (= *P. ohshimai*) which has been found in a species of *Stoichactis* (Haig, 1965; Macnae, 1968).

*Petrolisthes coccineus* (Owen)

Figs 8a-f

*Petrolisthes coccineus* (Owen), Laurie, 1925: 143. Miyake, 1943: 54. Haig, 1965: 46.  
*Petrolisthes barbatus* Heller, De Man, 1893: 296.

*Description:* Carapace only slightly wider than long, covered with transverse rugae, especially in anterior region. Rugae bearing short fringe of setae. Rostral margin finely denticulate. Strong supra-orbital spine present. Carapace margin between outer orbital angle and strong epibranchial spine also finely denticulate. Abdomen with bands of short stiff setae and scattered longer stiff setae. Entire cheliped surface rugose. Merus with toothed lobe at antero-distal angle, two strong spines on dorsal surface of distal margin. Carpus with anterior margin bearing four broad rugose spines. Distal margin of each spine bearing numerous plumed setae, posterior margin rugose, bearing three spines distally. Postero-distal angle lobe bispinose. Outer margin of hand denticulate, proximally some of denticles stronger than others. Entire under surface of cheliped rugose; upper surface bearing short setae. Pereiopods two to four with meri bearing about nine strong spines and dense fringe of plumose setae on anterior margin. Dorsal surface of meri bearing setose rugae. Postero-distal angle with two spines. Carpi with spine on antero-distal lobe, numerous scattered stiff setae, rows of plumose setae. Propodus cylindrical, with long scattered setae, ventral surface of distal portion with three or four strong spines, posterior surface with single spine at about midpoint. Dactyl with three spines on inner margin. Antenna with basal peduncular segment bearing denticulate lobe; second segment with several denticles on anterior margin. Basal antennular segment with four spines on anterior margin. Merus of maxilliped three with triangular lobe on inner margin bearing spine at the apex. Much colour lost in preservative, but anteriorly, some brilliant crimson remains.

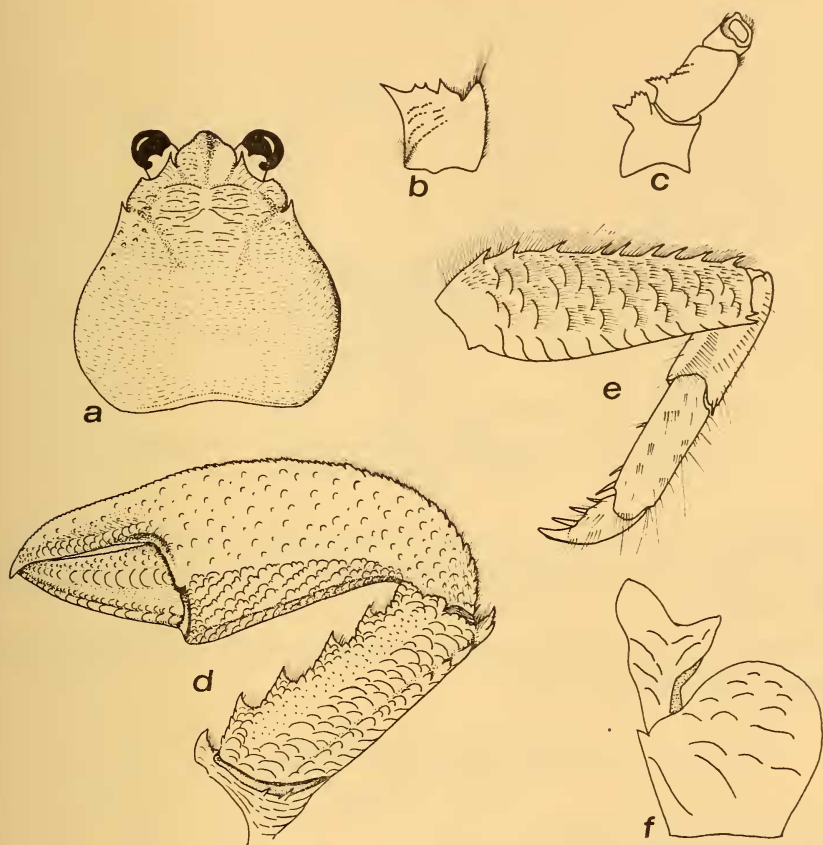
*Previous records:* Seychelles, Flores Sea, Nicobar Islands.

*Material:*

	<i>Carapace length</i>	<i>Carapace breadth</i>
Male . . . . .	17.2 mm	18.0 mm

Left cheliped missing, right cheliped—dactyl 12.0 mm, propodus 29.9 mm, carpus 15.6 mm.

*Remarks:* This specimen agrees exactly with Laurie's specimen from the Seychelles. De Man's description of *P. barbatus* mentions eight to ten teeth on the outer margin of the hand; these may be the enlarged rugae mentioned above. This specimen lacks the fringe of long hairs mentioned in *P. barbatus*, but it does have short plumose setae.

FIG. 8. *Petrolisthes coccineus* (Owen)

a. Carapace in dorsal view; b. Antennule; c. Antenna; d. Right cheliped; e. Second pereopod; f. Merus and ischium of maxilliped three.

## NATANTIA

### Family Hippolytidae

*Hippolyte ventricosa* H. Milne Edwards

Figs 9a-c

*Hippolyte ventricosa* H. Milne Edwards, Holthuis, 1947: 55 (complete synonymy). Barnard, 1950: 704.

*Description*: Rostrum two-thirds length of carapace, apically acute, two dorsal teeth, three ventral teeth. Suborbital margin slightly produced and rounded above antennal spine. Third carpal segment of second pereopod as long as first. Dactyl of pereopod three with eleven spines.

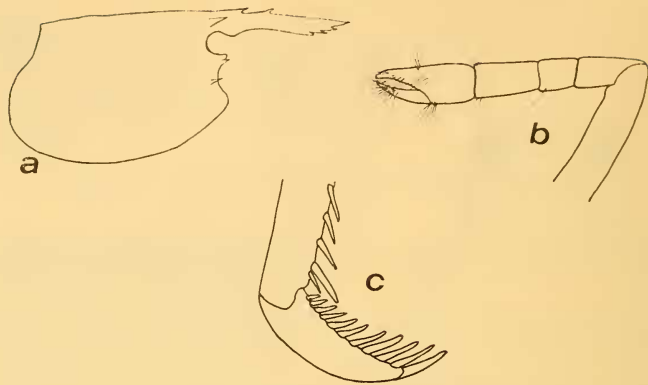


FIG. 9. *Hippolyte ventricosa* H. Milne Edwards

a. Carapace in lateral view; b. Chela and carpus of second pereopod;  
c. Dactyl of third pereopod.

*Previous records:* Most of the Indian Ocean region, South Australia and on the East African coast where the southernmost record is the mouth of the Zambesi River.

*Material:* One ovigerous female, carapace length (excluding rostrum) 2.9 mm, total length 16.0 mm.

*Thor amboinensis* (De Man)

Figs 10, 11a-e

*Thor amboinensis* (De Man), Holthuis, 1947: 50.

*Thor discosomatis* Kemp, 1916: 388; 1925: 330.

*Hippolyte amboinensis* De Man, 1888: 535.

*Description:* Carapace moderately inflated, rostrum reaching to middle of antennular peduncle, apically acute, bearing two dorsal spines. Small acute antennal spine, no pterygostomial spine. Stylocerite of basal segment of antennule reaching almost to end of peduncle. Small spine on outer proximal edge of stylocerite, more easily visible in lateral view than in dorsal view. Second segment with outer spine at distal end, third segment with broad movable scale. Antennal scaphocerite twice length of antennular peduncle. Pereiopod one stout, reaching almost to same level as scaphocerite. Second pereopod reaching to end of third maxilliped, carpus six jointed, proximal two segments short, less obvious than rest of segments. Third pereopod longest, extending beyond end of maxilliped three, merus with single disto-ventral spine. Dactyls of pereiopods three to five with stout apical and subapical claw, and three spines. Basal segment of pleopods, especially two and three with posterior foliaceous extension. Telson with four pairs of dorso-lateral spines, four pairs of terminal spines of which outermost are shortest.

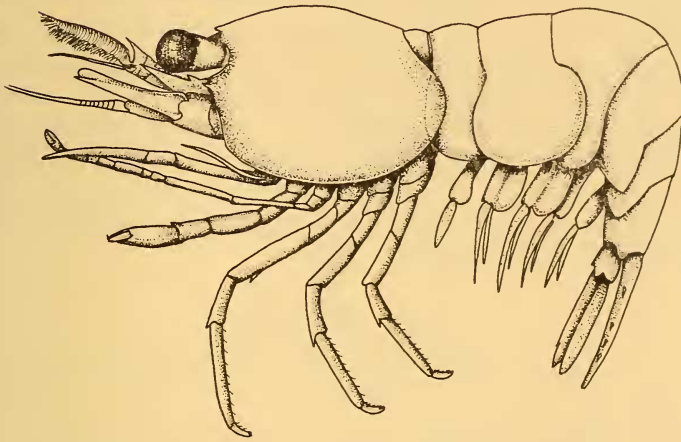


FIG. 10. *Thor amboinensis* (De Man)  
Entire animal in lateral view.



FIG. 11. *Thor amboinensis* (De Man)  
a. Rostrum in lateral view; b. Anterior region in dorsal view; c. Second pereiopod; d. Apex of third pereiopod; e. Telson.

*Previous records*: Bay of Bengal, Malay Archipelago, Andaman and Nicobar Islands.

*Material*: One male, carapace length (including rostrum) 4.0 mm.

*Remarks*: The genus *Thor* is characterized by a lack of arthrobranchs on the pereopods, a mandible possessing an incisor process but lacking a palp, a second pereopod with a six-jointed carpus, no epipods on the pereopods, and the third antennular peduncle segment with a movable plate at the upper anterior margin. The present specimen agrees well with both Kemp's and Holthuis's descriptions. The only differences exist in the antennular scale, being broader in the present specimen than in Kemp's figure (1916, fig. 1) and in the length of the terminal telson spines.

### Family **Alpheidae**

#### *Athanas minikoensis* Coutière

Figs 12a-c

*Athanas minikoensis* Coutière, 1905: 858. De Man, 1911: 149. Barnard, 1950: 731.

*Previous records*: New Guinea, Maldive and Laccadive Islands, Umtwalumi (Natal).

*Material*: One male, carapace length (including rostrum) 4.7 mm.

*Remarks*: The present specimen agrees well with Coutière's and De Man's descriptions and figures, with some slight differences. The larger chela of the male is said to bear one or two teeth on the immobile finger. In the present specimen, this margin is smooth except for two slight bumps. This specimen differs from the male mentioned by Barnard (1950: 731) which has a far more robust right chela, also the teeth of the fingers are more pronounced. These differences may be due to the immaturity of the specimen.

#### *Alpheus luciae* Barnard

Figs 13a-b

*Alpheus luciae* Barnard, 1947: 389; 1950: 755.

*Previous record*: St. Lucia Bay, Natal.

*Material*:

	<i>Carapace length</i> (including rostrum)
One ovigerous female . . . . .	14.7 mm
One male . . . . .	11.7 mm
Holotype (S.A.M. A8423) . . . . .	11.8 mm

*Remarks*: The holotype of this species, on re-examination, proved to be a male, the second pleopod bearing an appendix masculina and an appendix interna. This is the first record of the species since it was recorded in 1947.



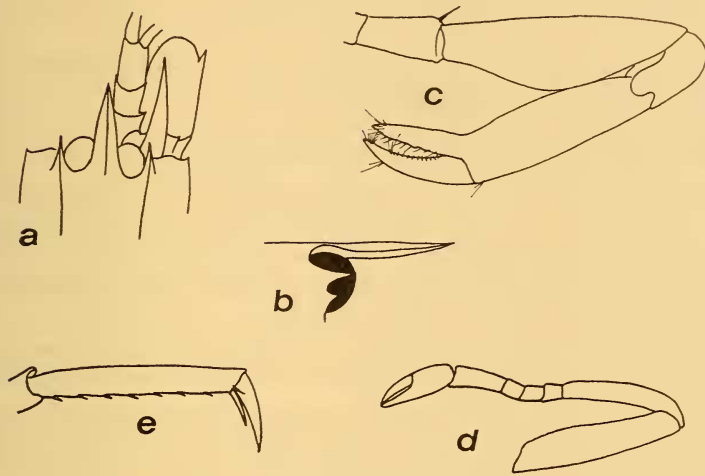


FIG. 12. *Athanas minikoensis* Coutière

a. Anterior region in dorsal view; b. Rostrum in lateral view; c. Cheliped; d. Second pereiopod; e. Third pereiopod.

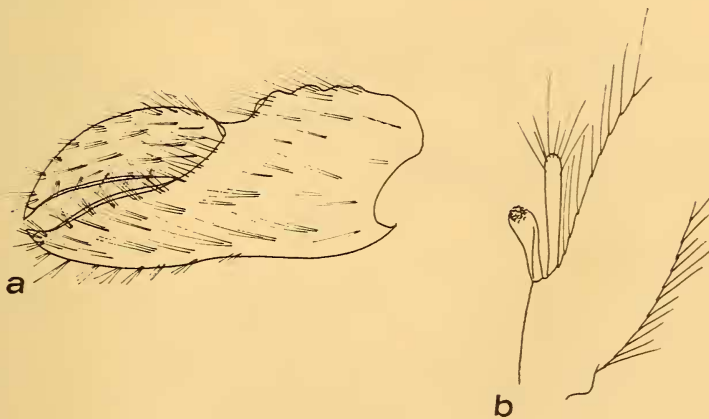


FIG. 13. *Alpheus luciae* Barnard

a. Upper surface of small chela; b. Endopod of pleopod two, male, showing appendix masculina and appendix interna.

*Alpheus paragracilis* Coutière

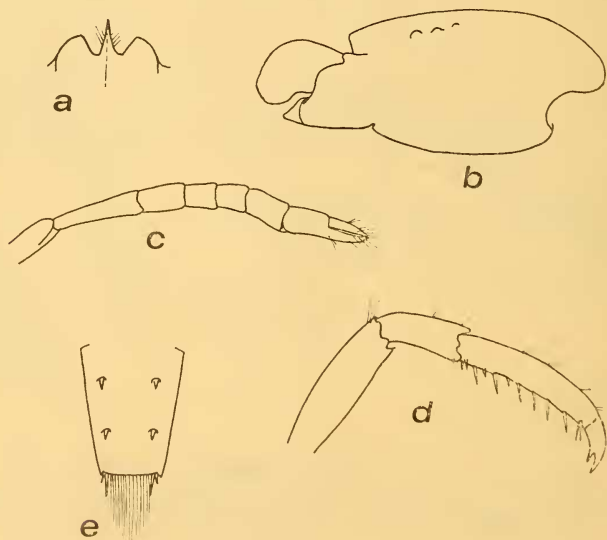
Figs 14a-e

*Alpheus paragracilis* Coutière, 1897: 303; 1905: 883. De Man, 1911: 310. Chace, 1966: 627.

*Previous records*: Tahiti, Djibouti, Maldive and Laccadive Islands, Nosy Bé (Madagascar), Hawaii, St. Helena Island.

*Material*: One ovigerous female, carapace length 4.9 mm.

*Remarks*: The presence of an acute tooth on the ventro-distal extremity of the meri of the third and fourth pereopods, biunguiculate dactyls of the last three pairs of pereopods, together with the absence of supra-orbital spines, seem to place this specimen in the species *paragracilis* Coutière, which belongs to the *Macrochirus* group of species. The present specimen agrees well in several respects with Coutière's figures (1905, fig. 22) especially in the telson, uropods and third pereopods. Slight differences exist in the second pereopods and in the large chela. In Coutière's figure the first segment of the carpus of the second pereopod is about two-and-a-half times the length of the second, while in the present specimen it is just twice the length. The larger chela agrees in the possession of a notch on the ventral surface. Coutière's figure, however, does not show any dorsal granulation as found in the present specimen. Unfortunately the smaller chela is missing.

FIG. 14. *Alpheus paragracilis* Coutière

a. Rostrum in dorsal view; b. Large chela; c. Second pereopod; d. Third pereopod; e. Telson.

## GENERAL DISCUSSION

The coastal areas of Moçambique have as yet been relatively poorly collected, especially with regard to invertebrate animals. Hilgendorf in 1878 dealt with a small collection of Crustacea collected by Professor W. Peters, while more recently, the late Dr. K. H. Barnard, and the Zoology Departments of the University of the Witwatersrand and the University of Cape Town have also added to our knowledge of the area. Being well within the semi-tropical/tropical region (but nevertheless within the South African region as defined by Barnard (1950: 2)), the Jangamo fauna is rich and varied, and new records and undescribed species are to be expected.

Of the 65 species of decapods collected, all except three are typical of the Indian Ocean region. These are *Porcellana dehaanii*, which has only been recorded from Natal and southern Moçambique; *Alpheus luciae*, which previously was known only from St. Lucia Bay, Zululand; and *Lybia plumosa* previously known only from northern Natal. Only one species in the collection is known from both the east and west coasts of southern Africa. This is *Palaemon pacificus*, which is found in the whole of the Indo-Pacific region and round to northern South West Africa. Twelve species are new records for this part of the African coast, one being a previously undescribed species.

## SUMMARY

A collection of 65 species of decapod Crustacea from Jangamo, Moçambique is discussed. Twelve records are of species new to the area; one species is hitherto undescribed.

## ACKNOWLEDGEMENTS

My thanks are due to the Zoology Department of the University of Cape Town, for making the material available.

The Trustees of the South African Museum thank the South African Council for Scientific and Industrial Research for a grant in aid of publication.

## REFERENCES

- ALCOCK, A. 1899. Materials for a carcinological fauna of India. Pt. 5. The Brachyura Primigenia or Dromiacea. *J. Asiat. Soc. Beng.* **68**: 123-169.
- ALCOCK, A. 1901. *Catalogue of the Indian decapod Crustacea in the collection of the Indian Museum. Part 1. Brachyura.* Calcutta: Indian Museum.
- BARNARD, K. H. 1947. Descriptions of new species of South African decapod Crustacea, with notes on synonymy and new records. *Ann. Mag. nat. Hist.* (11) **13**: 361-392.
- BARNARD, K. H. 1950. Descriptive catalogue of South African decapod Crustacea (crabs and shrimps). *Ann. S. Afr. Mus.* **38**: 1-337.
- BORRADAILE, L. A. 1903a. Marine crustaceans. IX. The sponge-crabs (Dromiacea). In GARDINER, J. S., ed. *The fauna and geography of the Maldive and Laccadive archipelagoes*: 574-578. Cambridge: University Press.
- BORRADAILE, L. A. 1903b. On the genera of the Dromiidae. *Ann. Mag. nat. Hist.* (7) **11**: 297-303.
- CHACE, F. A. 1966. Decapod crustaceans from St. Helena Island, South Atlantic. *Proc. U.S. natn. Mus.* **118**: 622-662.
- COUTIÈRE, H. 1897. Note sur quelques alphées nouveaux. *Bull. Mus. Hist. nat., Paris.* **1897**: 303-306.

- COUTIÈRE, H. 1905. Marine crustaceans. XV. Les Alpheidae. In GARDINER, J. S. ed. *The fauna and geography of the Maldive and Laccadive archipelagoes*: 852-918. Cambridge: University Press.
- CROSNIER, A. 1965. Crustacés décapodes. Grapsidae et Ocypodidae. *Faune Madagascar* **18**: 1-143.
- FOREST, J. & GUINOT, D. 1961. Crustacés décapodes brachyours de Tahiti et des Tuamotu. *Rapp. Expéd. fr. Récifs Coralliens, Nouvelle Calédonie 1960-63*. Prelim. vol. **1**: 1-195.
- GORDON, I. 1934. Résultats scientifiques du voyage aux Indes Orientales Néerlandaises de LL.AA.RR. le Prince et Princesse Leopold de Belgique. Crustacea Brachyura. *Mém. Mus Hist. nat. Belg.* (Hors sér.) **3** (15): 1-78.
- HAIG, J. 1965. Sur une collection de crustacés porcellanes (Anomura: Porcellanidae) de Madagascar et des Comores. *Cah. O.R.S.T.O.M. (Océanogr.)* **3** (4): 39-50.
- HILGENDORF, F. 1878. Die von Hrn. W. Peters in Moçambique gesammelten Crustaceen. *Mber. dt. Akad. Wiss. Berl.* **1878**: 782-851.
- HOLTHUIS, L. B. 1947. The Decapoda of the Siboga Expedition. Part IX. The Hippolytidae and Rhynchocinetidae collected by the Siboga and Snellius Expeditions with remarks on other species. *Siboga Exped. monogr.* **39a**<sup>8</sup>: 1-100.
- IHLE, J. E. W. 1913. Die Decapoda Brachyura der Siboga-Expedition. 1. Dromiacea. *Siboga Exped. monogr.* **39b**: 1-96.
- KEMP, S. 1916. Notes on Crustacea Decapoda in the Indian Museum. VII. Further notes on Hippolytidae. *Rec. Indian Mus.* **12**: 385-405.
- KEMP, S. 1925. Notes on Crustacea Decapoda in the Indian Museum. XVII. On various Caridea. *Rec. Indian Mus.* **27**: 249-343.
- LAURIE, R. D. 1925. Anomura collected by Mr. J. Stanley Gardiner in the western Indian Ocean. in H.M.S. *Sealark*. *Trans. Linn. Soc. Lond.* (2, Zool.) **19**: 121-167.
- MACNAE, W. 1968. A note on the occurrence of *Petrolisthes maculatus* (H. Milne Edwards) at Inhaca Island, Mozambique (Decapoda, Porcellanidae). *Crustaceana* **15**: 110.
- MAN, J. G. de. 1888. Bericht über die von Herrn Dr. J. Brock im indischen Archipel gesammelten Decapoden und Stomatopoden. *Arch. Naturgesch.* **53**: 215-600.
- MAN, J. G. de. 1893. Report on the podophthalmous Crustacea, collected in the year 1891 by Dr. H. Ten Kate in some islands of the Malay Archipelago. *Notes Leyden Mus.* **15**: 284-311.
- MAN, J. G. de. 1911. The Decapoda of the Siboga Expedition. Part II. Family Alpheidae. *Siboga Exped. monogr.* **39a**<sup>1</sup>: 1-465.
- MIYAKE, S. 1943. Studies on the crab-shaped Anomura of Nippon and adjacent waters. *J. Dep. Agric. Kyushu imp. Univ.* **7**: 49-158.
- ODHNER, T. 1925. Monographierte Gattungen der Krabben-familie Xanthidae. I. Göteborgs K. Vetensk.- o. VitterhSamh. *Handl.* (4) **29** (1): 1-92.
- RATHBUN, M. J. 1911. The Percy Sladen Trust Expedition to the Indian Ocean in 1905. Marine Brachyura. *Trans. Linn. Soc. Lond.* (2, Zool.) **14**: 191-261.
- RATHBUN, M. J. 1923. Report on the crabs obtained by the F.I.S. 'Endeavour' on the coasts of Queensland, New South Wales, Victoria, South Australia and Tasmania. *Zool. (biol.) Results Fish. Exp. 'Endeavour'* **5**: 93-156.
- SAKAI, T. 1936. Studies on the crabs of Japan. I. Dromiacea. *Sci. Rep. Tokyo. Bunrika Daig.* (B) suppl. **1**: 1-66.
- SAKAI, T. 1939. *Studies on the crabs of Japan*. **4**. Brachygnatha, Brachyrhyncha. Tokyo: Yokend.
- SAKAI, T. 1965. *The crabs of Sagami Bay*. Honolulu: East West Centre Press.
- TESCH, J. J. 1918. The Decapoda Brachyura of the Siboga Expedition. IV. Hymenosomidae, Retroplumidae, Ocypodidae, Grapsidae and Gecarcinidae. *Siboga Exped. monogr.* **39c**: 1-148.